

WHAT IS CLAIMED IS:

1. An additive mixture for lubricant oils which comprises:

a) an overbased alkaline earth metal sulfonate; and,

b) at least one friction modifier selected from the group consisting of a

5 polyalkylene succinic anhydride, an overbased alkaline earth carboxylate, the reaction product of an alkanolamine with a fatty acid or a fatty ester, the reaction product of thiodiglycol with a fatty acid or a fatty ester and the reaction product of a dialkylene glycol with a fatty acid or a fatty ester.

10 2. The additive mixture of claim 1 wherein the overbased alkaline earth metal

sulfonate is overbased calcium sulfonate.

15 3. The additive mixture of claim 2 wherein the overbased calcium sulfonate is an

amorphous overbased calcium sulfonate having a particle size of no more than about

30 nm.

20 4. The additive mixture of claim 2 wherein the overbased calcium sulfonate is a

crystalline overbased calcium sulfonate having a particle size of from at least about 50

nm to about 100 nm.

25 5. The additive mixture of claim 1 wherein the friction modifier comprises

polyisobutylene succinic anhydride.

6. The additive mixture of claim 1 wherein the friction modifier comprises calcium carboxylate.
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7. The additive mixture of claim 1 wherein the friction modifier comprises barium carboxylate.
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8. The additive mixture of claim 1 wherein the friction modifier comprises the reaction product of triethanolamine with a fatty acid or fatty acid ester.
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9. The additive mixture of claim 8 wherein the friction modifier comprises the reaction product of triethanolamine with one or more of a fatty compound selected from the group consisting of methyl oleate, tall oil fatty acid, oleic acid, ricinoleic acid, isostearic acid, erucic acid, mixed oleic acid/stearic acid and iso-oleic acid.
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10. The additive mixture of claim 1 wherein the friction modifier comprises the reaction product of thiodiglycol with methyl oleate.
11. The additive mixture of claim 1 wherein the friction modifier comprises the reaction product of a diethylene glycol with methyl oleate.
12. A lubricant composition comprising:
- a) a lubricant oil stock
- b) an overbased alkaline earth metal sulfonate; and,

c) at least one friction modifier selected from the group consisting of a polyalkylene succinic anhydride, an overbased alkaline earth carboxylate, the reaction product of an alkanolamine with a fatty acid or a fatty ester, the reaction product of thiodiglycol with a fatty acid or a fatty ester and the reaction product of a dialkylene glycol with a fatty acid or a fatty ester.

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13. The lubricant composition of claim 12 wherein the overbased alkaline earth sulfonate is an amorphous overbased calcium sulfonate having a particle size of no more than about 30 nm.

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14. The lubricant composition of claim 12 wherein the overbased alkaline earth sulfonate is a crystalline overbased calcium sulfonate having a particle size of from at least about 30 nm to about 50 nm.

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15. The lubricant composition of claim 12 wherein the friction modifier comprises the reaction product of triethanolamine with a fatty acid or fatty acid ester.

16. The lubricant composition of claim 15 wherein the friction modifier comprises lubricant composition.

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17. The lubricant composition of claim 12 wherein the friction modifier comprises the reaction product of thiodiglycol with methyl oleate.

18. The lubricant composition of claim 12 wherein the friction modifier comprises the reaction product of diethylene glycol with methyl oleate.

19. A method for storing a lubricant composition comprising the steps of :

5           a) combining with a lubricant stock an additive mixture including

              i) an overbased alkaline earth metal sulfonate; and,

              ii) at least one friction modifier selected from the group consisting of a polyalkylene succinic anhydride, an overbased alkaline earth carboxylate, the reaction product of an alkanolamine with a fatty acid or a fatty acid ester, the reaction product of thiodiglycol with a fatty acid or a fatty ester and the reaction product of a dialkylene glycol with a fatty acid or a fatty ester, to provide a lubricant composition;

10           b) containing said lubricant composition within a vessel.

20. The method of claim 19 wherein said overbased alkaline earth sulfonate is

15           overbased calcium sulfonate, and the friction modifier is selected from the group consisting of the reaction product of triethanolamine with one or more of a fatty compound selected from the group consisting of methyl oleate, tall oil fatty acid, oleic acid, isostearic acid and mixed oleic acid/stearic acid, overbased barium carboxylate, overbased calcium carboxylate and the reaction product of thiodiglycol with methyl

20           oleate.